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Attribution Theory

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Why is my boyfriend acting so distant? Why did the teacher ignore my comment in class? Every day, we encounter events that require explanation. Causal analysis, that is, the attempt to identify what factors gave rise to what outcomes, is central to explaining events and consequently, to social cognition more generally.

Even the most trivial of events often contains an implicit causal analysis. Observing a classmate passing out leaflets that argue against abortion leads us immediately to assume that his own attitude must be antiabortion as well. Under these circumstances, the attribution process may be almost automatic, and we may have little awareness that we have actually made a causal attribution for the classmate's behavior (e.g., Gilbert, Pelham, & Krull; 1988; Winter & Uleman, 1984).

But there are many circumstances in which causal analyses are more intentional, deliberate, and time-consuming. The imputation of causality becomes a more self-conscious process when people are surprised or threatened by unexpected or negative events that undermine their beliefs and expectations (Abele, 1985; Bohner, Bless, Schwarz, & Strack, 1988; Hastie, 1984; Pittman & Pittman, 1980; Pyszczynski & Greenberg, 1981; Schoeneman, van Uchelen, Stonebrink, & Cheek, 1986; Weiner, 1985a; Wong & Weiner, 1981). For example, receiving a surprising rebuff from a friend produces more analysis (Did I offend him? Is he in a bad mood? Did I misunderstand the conversation last night?) than does receiving the warm greeting one expected. Other conditions that promote

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causal analysis include the presence of questions that inquire about the causes of behavior (Enzle & Schopflocher, 1978), a person's dependence on another for desired outcomes (e.g., Berscheid, Graziano, Monson, & Dermer, 1976; Erber & Fiske, 1984; Harvey, Yarkin, Lightner, & Town, 1980; Monson, Keel, Stephens, & Genung, 1982), and the perceived loss of control (e.g., Pittman & D'Agostino, 1985; Pittman & Pittman, 1980; see Hastie, 1984, for a review).

WHAT IS ATTRIBUTION THEORY?

Psychologists have made the distinction between attribution theory and attributional theories. Attribution theory is a collection of diverse theoretical and empirical contributions that share several common concerns (see Harvey & Weary, 1981; Kelley & Michela, 1980; Ross & Fletcher, 1985, for extensive reviews of the attribution field). (Attribution theory deals with how the social perceiver uses information to arrive at causal explanations for events.) It examines what information is gathered and how it is combined to form a causal judgment.*Attributional theories are theories about particular content domains, such as achievement behavior, helping, coping with threatening events, and so on, that draw on the principles of attribution theory in generating predictions about how people respond in these particular domains. Thus, attribution theory is concerned with the generic causal principles that people employ that might be used in a wide variety of domains, whereas attributional theories are concerned with the specific causal attribution processes that people employ in a particular life domain. While one might be tempted to think of attributional theories as applied attribution theory, in fact, several of the attributional theorists, most notably Weiner (1986), have made fundamental contributions to our understanding of the basic generic principles of causal inference.

Why do people make causal attributions? Research has generally assumed either implicitly or explicitly that causal analysis is initiated by people's needs to predict the future and to control events (Heider, 1958; Jones & Davis, 1965; Kelley, 1967). Presumably, understanding what factors give rise to a certain outcome enables one to control the likelihood of that outcome, or at least to predict when it will happen. Following from this point is the observation that causal attribution is important for the pursuit of goals.(One must know how things happen in order to make them happen)(Forsterling & Rudolph, 1988). Perhaps the most fundamental assumption of attribution research is that causal attributions are important. Presumably social perceivers do not merely entertain themselves by constructing causal analyses of the world. Psychologists believe that causal analysis can be tied in important ways to attitudes and fundamental values (Feather, 1985); causal attributions

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can be the basis of behavior, other cognitions, and feelings (see E. E. Jones et al., 1972).

Six different theoretical traditions form the backbone of what is now called attribution theory. The first is Heider's analysis of common-sense psychology (1958). His work strongly influenced both E. E. Jones and Davis's analysis of correspondent inference (1965), a theory of how people form inferences about other people's attributes, and Kelley's work on covariation and causal schemas (1967), which are general models of causal inference. Schachter's theory of emotional lability (1964) and D. J. Bem's self-perception theory (1967, 1972) extended attribution ideas into the arena of self-perception. Bernard Weiner's (1979; 1985b) attributional theory, conducted largely in the domains of achievement and helping, articulated a dimensional structure for understanding causal inference.

HEIDER'S THEORY OF NAIVE PSYCHOLOGY

The work of Fritz Heider (1944, 1958) spearheaded the field of attribution theory. Heider maintained that a systematic understanding of how people comprehend the social world can be enlightened by common-sense psychology: the ways in which people usually think about and infer meaning from what occurs around them. This common-sense psychology, or, as some call it, naive epistemology, can best be learned through the natural language that people employ for describing their experience. To oversimplify, if I listen to you talk for a while about other people, I should gain some insight into how you think about what causes people to behave as they do; and if I listen to enough people talk, the common elements in how they understand others should help me construct a theory of causal inference. Heider believed that what motivates this inference process is people's need to predict and control the environment. People, he maintained, have a need to anticipate and influence what will happen to them and to others around them, and the best way of doing this is through understanding the causes of behavior.

Heider based his theory on the "lens" model of perception originally developed by Brunswik (1956) to explain how people perceive objects. According to Brunswik, objects are never directly perceived; instead, how they are perceived by an individual depends on the attributes of the object itself, on the context in which the object is perceived, on the manner in which it is perceived (e.g., through a fog, a tunnel, or a prism), and on characteristics of the perceiver. The final perception, then, is based on all these components—object, context, mediation, and perceiver.

Heider believed that object perception and person perception have much in common and maintained that person perception processes involve many of the same inferential tasks and problems that exist with object perception. As in object perception, perception of another individual (e.g., your reaction to your new college roommate) will be a function of the person's behavior (how pleasant he or she is), the context in which it was enacted (whether your roommate was pleasant before or after the parents left), the manner in which the perceiver experienced it (learning about your roommate from others or deciding about him or her based on your mutual interactions), and the perceiver's own characteristics and preconceptions about how and why others behave as they do (whether or not this type of person generally appeals to you and whether or not you see any offensive behaviors as redeemable). However, as we noted before, people also differ from objects in important ways: people cause actions; they have intentions, and they have abilities, desires, and sentiments; they are aware of being perceived and are, in turn, perceivers themselves. As a consequence of these factors, their status as causal beings is particularly central in the attribution process.

Fundamental to the question of why someone behaves as he or she does, according to Heider, is whether the locus of causality for that behavior is in the person (internal) or in the environment (external), or both. Internal locus or personal factors consist of *motivation* (trying) and the *ability* to accomplish that action. For example, I may be able to complete my calculus homework, but without any motivation to do so I may leave it undone. Alternatively, I may want to do my calculus homework but lack the skill to do so. Moreover, motivation and ability are not necessarily enough. To these factors must be added or subtracted situational forces that favor or oppose the outcome. For example, if my calculus homework is easy, my motivation and ability may be sufficient to do the work. If it is hard, they may not be. Whether one can succeed at a task, then, is a joint feature of task difficulty and ability; whether one does succeed is additionally determined by the motivational factors of intention and effort. The social perceiver uses what information he or she has about motivational factors, ability, and situational factors to infer the cause of the event. If I successfully complete my calculus homework, then ability, motivation, and situational forces have obviously been adequate for the task.

Heider was also concerned with perceptions of responsibility for outcomes. Under many circumstances, it not only matters what caused an event to happen, it also matters who is responsible for it (see Shaver, 1985; Shaver & Drown, 1986). If someone tells you that I shot my neighbor, the causality question of "who" has been answered but not the responsibility question. Did I shoot him by accident or on purpose? Heider hypothesized that there are varying levels of responsibility that determine how accountable one is for one's actions. The most removed

level of responsibility is *association*, whereby a person is held accountable for an action with which he or she is not causally involved. If my neighbor shot himself, but his son tells me I "shot" him for not having noticed his darkening mood or erratic behavior, then I have been labeled responsible by association. *Causal responsibility*, the next level of responsibility, occurs when a person performs an action, but neither intended nor foresaw it. If I shoot at an intruder in the brush, and my neighbor, who happens to be walking there unbeknown to me, is hit, then I am causally responsible for the shooting. If I knew he was in the brush, but fired anyway, expecting to hit the intruder instead, then I bear a greater amount of responsibility because I should have anticipated the possible outcome (*foreseeability*). If I intended to shoot my neighbor and used the intruder as an excuse, then my behavior is *intentional*, and I bear a great deal of responsibility for the outcome. Finally, if I shoot at my neighbor because he shot at me first, then my behavior would be thought by most people to be *justifiable*; although I would be held responsible for my behavior, the behavior would be considered justified by the situation. Heider's analysis has generated considerable research, both on how people develop conceptions of credit and blame for actions (e.g., V. L. Hamilton, Blumenfeld, & Kushler, 1988) and for how people use information in situations to distinguish among causality, responsibility, and blame (e.g., Fincham & Roberts, 1985; B. Harris, 1977; Karlovac & Darley, 1988; Shaver & Drown, 1986).

It is important to note the obvious parallels between naive judgments of responsibility and legal categories for the dispensation of justice. Such terms as *criminal negligence, involuntary manslaughter*, and *first-degree murder* reflect in their definitions many of the same distinctions contained in the different levels of responsibility outlined by Heider. This is one example demonstrating that attributions are not only personally enlightening, they also reflect distinctions that societies find meaningful as a basis for collectively interpreting and acting upon experience.

Heider's major contribution to attribution theory was to define many of the basic issues that would later be explored more systematically in further theoretical ventures. In particular, his thinking on causality and responsibility gave rise to subsequent theoretical work by E. E. Jones and Davis (1965) and Kelley (1967).

JONES AND DAVIS'S CORRESPONDENT INFERENCE THEORY

One model of attributional processes that was heavily influenced by Heider concerns how the social perceiver makes attributions about the causes of other people's behavior. This model is termed *correspondent inference theory* (E. E. Jones & Davis, 1965) and concerns how people make stable attributions about the dispositional qualities of people. Other people, unlike objects, have intentions and the capacity to act on them; because of this, their actions are meaningful and are most likely to be the objects of our attributional interest.

Jones and Davis began with the assumption that we search for meaningful explanations for others' behavior that are both stable and informative. According to the theory, the behavior of another person will be most informative when it is judged to be intentional, and further, to have been produced by a consistent underlying intention, not one that changes from situation to situation. Whims tells you less about a person than do regularities in intentions. The goal of the attribution process, according to Jones and Davis, is the ability to make *correspondent inferences* about another person: to reach the conclusion that the behavior and the intention that produced it correspond to some underlying stable quality in the person, that is, a disposition. Knowing the dispositional attributes of others presumably enables one both to understand and to predict their behavior. For example, it is informative to know that a professor who treated you nicely genuinely enjoys working with students, whereas it would not be so informative to know that the professor was simply in a good mood.

Jones and Davis maintained, as did Heider, that the ability to impute intentions depends on knowing whether or not the person committing the behavior (actor) knew the effects that the behavior would produce and had the ability to produce the behavior. One would not, for example, infer an intention if a three-year-old child shut off the house lights during a concert, but one would certainly infer an intention if the chief custodian did so. Hence the imputation of intention requires the minimum assumptions of knowledge and ability on the part of the actor.

The Analysis of Noncommon Effects

To infer that an intention is based on an individual's underlying disposition or preference requires further analysis. One tool by which this task is accomplished is the *analysis of noncommon effects*. That is, when more than one course of action is available to an individual, one can ask: What did the chosen behavior produce that some other behavior would not have produced? By comparing the consequences of the action that is actually taken with the consequences of actions that are not taken, one can often infer the strength of the underlying intention by looking for distinctive consequences. For example, if I am offered two jobs that are very similar except that one has sports facilities, and I choose that one, then you may infer that sports facilities are important

to me. Furthermore, if many relatively negative elements are incorporated into the chosen alternative relative to the unchosen ones, you may infer that the positive elements are especially important to me. Thus, if I choose the job with the sports program, despite the fact that it is at a less prestigious organization and in an undesirable part of the country, you can infer that sports facilities are very important to me indeed. Figure 2.1 provides another example of how the analysis of noncommon effects is used to reach conclusions about an individual's intentions.

One can also infer dispositions more confidently when there are fewer noncommon effects between the chosen and unchosen alternative (Ajzen & Holmes, 1976). If the only thing that distinguishes the two jobs is that one has sports facilities, then you can more confidently infer my interest in sports facilities than if the two jobs differ in several ways.

In conclusion, then, the analysis of noncommon effects leads to correspondent inferences by identifying the distinctive consequences of an actor's chosen course of action. The fewer the distinctive consequences, the more confidently one can make an inference. The more negative the elements incorporated into the chosen alternative, the more one can infer the importance of the distinctive consequence. Of course, alternative courses of action, as well as their consequences and their noncommon effects, may be very difficult to ascertain. Hence, the analysis of noncommon effects can be fraught with ambiguity.
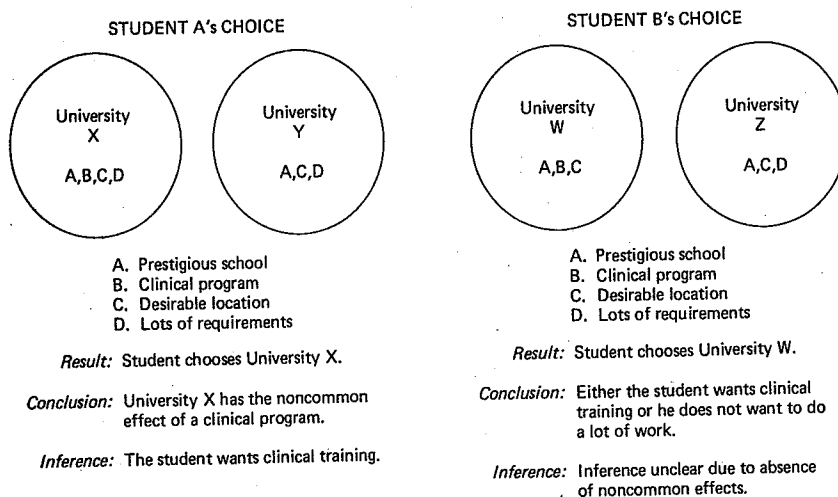

STUDENT A's CHOICE

University X — A,B,C,D
University Y — A,C,D

A. Prestigious school
B. Clinical program
C. Desirable location
D. Lots of requirements

Result: Student chooses University X.

Conclusion: University X has the noncommon effect of a clinical program.

Inference: The student wants clinical training.

STUDENT B's CHOICE

University W — A,B,C
University Z — A,C,D

A. Prestigious school
B. Clinical program
C. Desirable location
D. Lots of requirements

Result: Student chooses University W.

Conclusion: Either the student wants clinical training or he does not want to do a lot of work.

Inference: Inference unclear due to absence of noncommon effects.

FIGURE 2.1 The analysis of noncommon effects choosing a graduate school. (After E. E. Jones & Davis, 1965.)

Other Bases for Forming Correspondent Inferences

Because the analysis of noncommon effects can produce ambiguous conclusions concerning an actor's dispositional qualities, the social perceiver must draw on other cues as well. These include choice, social desirability, social role, and prior expectations. We will consider each in turn.

One basis for resolving the ambiguity of action is the *social desirability* of the behavior. With the decreasing social desirability of the action, one is able to infer more confidently an underlying disposition. For example, if a job candidate knew that being extraverted and having people skills were important requirements of a prospective job and she then behaved in an extraverted, socially skilled manner, it might be difficult for the job interviewer to ascertain whether she was really extraverted and skilled or whether these were behaviors she had adopted for the purpose of creating a positive impression in the job interview. However, if the job called for extraversion and social skills and the candidate behaved in an introverted fashion, the job interviewer could infer with some confidence that the candidate was, in fact, an introverted sort; else, why would she behave in that way when the situational constraints so clearly called for different behavior? (E. E. Jones, Davis, & Gergen, 1961; see E. E. Jones & McGillis, 1976.) Social desirability is an important criterion for determining causality, because so often behavior is constrained by social propriety. When people are willing to break with norms or conventions to act in a certain way, one can be reasonably certain that their behavior reflects their true beliefs because by so doing they are risking socially aversive consequences, such as rejection.

Another potential basis for inferring an actor's dispositions is whether the behavior of the actor is situationally constrained or whether it occurs from the actor's *choice.* Suppose you are asked to take part in a classroom debate and the teacher assigns you the position of arguing in favor of capital punishment. Knowing that you had been assigned this side of the debate, it would be unwise of your audience to infer that your statements reflected your true beliefs. If, however, you had chosen to argue in favor of capital punishment, then the audience might appropriately conclude, with some confidence, that your statements do reflect your underlying beliefs.

Although choice is a variable that ought to have an impact on whether or not people draw correspondent inferences, research suggests that people do not take choice into sufficient account when judging another person's attributes or attitudes. There is a pervasive tendency for people to assume that when an actor engages in an activity, such as arguing against capital punishment, the statements made are indicative of the person's underlying beliefs, even when there are clear

situational factors that constrain the behavior (E. E. Jones & Harris, 1967; Reeder, Fletcher, & Furman, 1989; see also L. Ross, Amabile, & Steinmetz, 1977). Research suggests that part of the reason for this tendency is that people have a strong expectation that when others are asked to express attitudes on a controversial position, they will make statements that are at least somewhat reflective of their own attitudes on the issue (Miller, Jones, & Hinkle, 1981; Miller & Rorer, 1982; Miller, Schmidt, Meyer, & Colella, 1984; Reeder & Brewer, 1979; Reeder, Fletcher, & Furman, 1989). Research also suggests that dispositional attributions based on constrained behavior can occur when there are cues in the setting, suggesting that the person intended the behavior. Thus, for example, if an essay writer is constrained to write in a particular direction and facial expressions suggest that the person is contented with this assignment, then dispositional attributions for the essay's position may result even when the situational constraints are high (Fleming & Darley, 1989).

Perceivers can even be unaware of the impact of situational forces on an actor's behavior when they themselves are the situational force that has caused the behavior. Thus, for example, in one study (Gilbert & Jones, 1986a), subjects either assigned an actor to present a liberal (or a conservative) set of arguments regarding abortion or they observed another subject assigning the actor to present a particular set of arguments. Subjects were then asked to estimate the actor's true attitudes. The subjects inferred the actor's true attitudes to be consistent with the statements he made, just as observers did, even when the subject had brought the actor's behavior about by assigning him the position.

Even when subjects can be induced to notice their own impact on a target actor's behavior, they may fail to ignore other situational forces on the target's behavior, inferring that the target's own dispositions are the only other predominant force on the target's behavior (Gilbert, Jones, & Pelham, 1987). In fact, it seems to require fairly explicit cues suggesting that situational factors may have elicited an actor's behavior for people to properly subdue their tendency to make dispositional attributions for an actor's behavior (Ginzel, Jones, & Swann, 1987; J. T. Johnson, Jemmott, & Pettigrew, 1984; E. F. Wright & Wells, 1988). A similar error can be identified at the group level. People have a tendency to use a group's decision to attribute correspondent attitudes to the group's members, even when there is information to indicate that all members do not support the decision or there is situational information to suggest that the group decision was made for situational reasons (Allison & Messick, 1985; Mackie & Allison, 1987).

A third condition that can help resolve the ambiguity of an action's meaning is whether the behavior is part of a *social role*. Behavior that is constrained by a role is not necessarily informative about an actor's underlying beliefs or behaviors. For example, when firefighters put out a fire, we do not infer that they are helpful; they are simply doing their job. But when people in well-defined social roles display out-of-role behavior, those actions can be used to infer underlying dispositions, since explanations related to role are effectively ruled out. For example, if a priest argues in favor of a woman's right to an abortion, you may infer confidently that his behavior reflects his true beliefs, since it so clearly contradicts the abortion attitudes one expects in a priest.

However, like choice, role is also a situational factor that may be overlooked when attributing causes for behavior. L. Ross, Amabile, and Steinmetz (1977) demonstrated this point particularly well in a study that simulated a television quiz show. College student subjects were randomly assigned to the role of questioner or contestant. The questioner was told to compose a set of general knowledge questions of some difficulty (e.g., "What do the letters D. H. stand for in D. H. Lawrence?") that would be posed to the contestants and could be scored as correct or incorrect. The contestant was merely supposed to answer as many of the questions as he or she could. Of course, the questioner was at a decided advantage in displaying his or her range of knowledge, whereas the contestant was at a distinct disadvantage, at the mercy of whatever questions the questioner posed. Needless to say, contestants were able to answer relatively few of the questions posed to them. Despite the clear advantage of the questioner role conferred by the task, however, both the questioner and the contestant rated the questioner as more generally knowledgeable than the contestant; the effect was strongest for the contestant's beliefs about the questioner (see also Block & Funder, 1986; Davies, 1985).

Prior expectations about a target individual can help the social perceiver identify the person's dispositional qualities (e.g., E. E. Jones & McGillis, 1976). Some expectations are based on knowledge of what is normative for a situation (*population-based* expectations). This type of expectation derives from the social desirability concerns just described (e.g., "She'll be polite because everybody's polite in this situation"). Other expectations are *category-based* and involve beliefs about a target based upon his or her category membership (e.g., "She's a Southerner, so of course she'll be polite"). People also have expectations about others when they have interacted with them on more than one occasion. These expectations are *target-based*, because they relate to the specific target rather than the category of which he or she might be a member (e.g., "She'll be polite because she's always that way"). Thus, knowing something about an individual's background, having information about prior behavior, or perceiving consistency in behavior or intentions over time can lead to a dispositional attribution. Deviations from expected patterns of behavior or intention may also help the social perceiver refine prior dispositional attributions. For example, if Sue knows that one of her colleagues is a very conscientious worker but observes that he

stays home when his children are sick, she can make more precise inferences about his priorities. People can also use expectations to dismiss the significance of information: When information is too discrepant with prior expectations, people downplay its veracity or significance (E. E. Jones & McGillis, 1976).

There are at least two biases that perceivers hold that can sometimes interfere with an accurate assessment of another person's dispositional qualities. *Hedonic relevance* refers to the impact that an actor's behavior has on the perceiver, such as whether the action obstructs or promotes the perceiver's goals or interests. Generally, perceptions of correspondence increase as hedonic relevance increases. For example, if your roommate leaves your suite unlocked and your money and camera are stolen, you are more likely to infer that she is careless than if no harm was done. Neutral actions may also be assimilated to the hedonic value of the target action, thereby strengthening the inference. For example, you may also see her other actions, such as her chronic lateness to class, as further evidence of this dispositional characteristic of carelessness.

Personalism is the perceiver's perception that the actor intended to benefit or harm the perceiver. In this case, not only is the actor's action hedonically relevant for the perceiver, but it is seen by the perceiver as intending to be so. For example, if your roommate hogs the phone so that you cannot talk to your girlfriend (hedonic relevance) and you perceive that to be the reason for the behavior (personalism), you are more likely to infer that he is an obnoxious, mean individual than if he were simply talking for reasons unrelated to your interests. The latter circumstance might elicit some annoyance, but not a dispositional attribution of unkindness.

In summary, then, correspondent inferences can be drawn or further refined by determining whether or not a given behavior is freely chosen, socially desirable, or consistent with social roles or prior expectations. However, the perceiver's attributions are not always unbiased, and two factors that can influence the attribution process are the hedonic relevance of the action for the perceiver and the judgment that the action was intended to benefit or harm the perceiver (personalism).

KELLEY'S ATTRIBUTION CONTRIBUTIONS

Harold Kelley developed two formulations of the attribution process. For cases in which people have access to multiple instances of the same or similar events, he formulated the covariation model (1967). For cases in which information is limited to a single event, he formulated the concept of causal schemata (Kelley, 1972b). Kelley's attribution formulations differ from that of Jones and Davis in several important ways. First, as just noted, Kelley's models cover both multiple events and sin-

gle events. Second, his models detail the processes for making attributions of causality not only to other people but to environmental factors and to the self as well.[1]

Kelley began with the observation that knowledge about the world, especially the social world, is often elusive or ambiguous. Although people usually have enough information to function effectively on a social level (see Thibaut & Kelley, 1959), under some circumstances, the information level is not adequate. This situation can occur when one's beliefs or opinions receive little support from others, when problems exist that are beyond one's capabilities, when information about an issue is poor or ambiguous, when one's views have been labeled as untrue or inappropriate, or when one encounters some other experience that produces low self-confidence. When any of these conditions occurs, attributions for events become uncertain (Kelley, 1967). Under these circumstances, people are especially susceptible to social influence, and they are likely to seek out additional information to validate a tentative impression of what is occurring or to develop an explanation of what is occurring. In short, uncertainty prompts causal analysis.

The Covariation Model

Under many circumstances, an individual will have access to multiple instances of the same or similar events. For example, we see our friends interacting with many different people or we observe our own repeated interactions with others. With information about multiple events, we can employ a covariation principle to infer the causes of events. Covariation is the observed co-occurrence of two events. If my roommate gets cold and distant every time I bring home a friend, that is a high covariation. If she is cold and distant only sometimes when I bring home a friend and also some times when I don't bring home a friend, that is a low covariation. In trying to understand the cause of some effect (e.g., cold and distant behavior), we observe its covariation with various potential causes and attribute the effect to the cause with which it most closely covaries. If my roommate's behavior is only cold and distant when I bring a friend in, I can infer that she does not like being disturbed by outsiders.

According to Kelley, people assess covariation information across three dimensions relevant to the entity whose behavior they are trying to explain. An entity may be another person or a thing. As an example, consider a young man who goes with a young woman (entity) to a

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[1]The E. E. Jones and McGillis (1976) update of E. E. Jones and Davis (1965), and Kelley's later work (1972a) make the theories now much more similar in their predictions and in the phenomena they encompass than was originally true.

party only to find himself ignored while she flirts with several other men. He is likely to wonder why she bothered to go out with him in the first place and to be (at least) curious about why this has happened. The three dimensions along which he will test his attributions, according to Kelley, are:

> *Distinctiveness*
> Does the effect occur when the entity (the young woman) is there and not when it is not? (For example, is she the only woman to have behaved this way toward him in the past, or have other women done the same thing?)
>
> *Consistency over time/modality*
> Does the effect occur each time the entity is present and regardless of the form of the interactions? (For example, has she done this to him before and at other events as well as at parties?)
>
> *Consensus*
> Do other people experience the same effect with respect to this entity? (For example, has she done this to other people?)

According to Kelley, one is able to make a confident entity attribution with the combination of high distinctiveness, high consistency, and high consensus information. In this case, one may conclude that this entity, the young woman, is an impossible hussy if she is the only person who treats the wretched young man this way (high distinctiveness), if she has always done this in the past (assuming he has been foolish enough to take her out before) (high consistency), and if others have had similar experiences with her (high consensus).

Other combinations of information can also yield meaningful causal inferences. For example, suppose we learned that the young lady has never ignored other dates before (low consensus), she has always ignored this date in the past (high consistency), and most other women have also ignored this young man (low distinctiveness). One might be inclined to think there is something rather offensive about the young man, such as rude manners or bad breath. The combination of low distinctiveness, high consistency, and low consensus reliably produces this kind of person attribution (McArthur, 1972).

Covariation principles can also be employed to form joint attributions of causality. Suppose we learned that the young man has never been ignored by another date (high distinctiveness), the young lady has never ignored any other date (low consensus), but she has always ignored this fellow every time they have gone out together (high consistency). Under these circumstances, we would be inclined to attribute responsibility to them jointly, concluding that they are a fatal combination as well as gluttons for punishment (McArthur, 1972). Table 2.1

TABLE 2.1 USING KELLEY'S COVARIATION MODEL TO ANSWER THE QUESTION: WHY DOES RALPH (PERSON) TRIP OVER JOAN'S (ENTITY) FEET WHILE DANCING?

High distinctiveness

	High consistency		Low consistency	
Distinctiveness	Ralph does not trip over almost any other partner's feet.			
	High consensus	Low consensus	High consensus	Low consensus
Consistency	In the past, Ralph has almost always tripped over Joan's feet.		In the past, Ralph has almost never tripped over Joan's feet.	
	High consensus	Low consensus	High consensus	Low consensus
Consensus	Almost everyone else who dances with Joan trips over her feet.	Hardly anyone else who dances with Joan trips over her feet.	Almost everyone else who dances with Joan trips over her feet.	Hardly anyone else who dances with Joan trips over her feet.
Attribution	Joan is not coordinated. She is at fault. An entity attribution should be made.	Ralph and Joan are jointly responsible. Both are necessary to produce the outcome. A person-entity attribution is warranted.	Usually Ralph is able to overcome Joan's uncoordination, but not today. A circumstance attribution is warranted.	It's a bad day. A circumstance attribution is warranted.

Low distinctiveness

	High consistency		Low consistency	
Distinctiveness	Ralph trips over lots of partners' feet.			
	High consensus	Low consensus	High consensus	Low consensus
Consistency	In the past, Ralph has almost always tripped over Joan's feet.		In the past, Ralph has almost never tripped over Joan's feet.	
	High consensus	Low consensus	High consensus	Low consensus
Consensus	Almost everyone else who dances with Joan trips over her feet.	Hardly anyone else who dances with Joan trips over her feet.	Almost everyone else who dances with Joan trips over her feet.	Hardly anyone else who dances with Joan trips over her feet.
Attribution	Ralph and Joan are jointly responsible. Either is *sufficient* to cause the outcome. A *person-entity* attribution should be made.	Ralph is uncoordinated and is at fault. A *person* attribution should be made.	Ralph and Joan are both uncoordinated. Usually they overcome it. But not today. Attribution is ambiguous.	Ralph is uncoordinated. Joan is usually able to overcome it. But not today. Attribution is ambiguous.

shows how the covariation model can be used to reach different causal attributions.

Attributions can also provide guidelines for future behavior (McArthur, 1972). Specifically, entity attributions produce *response generalization*. For example, if the young man decides that the young lady is at fault for the unpleasant evening, then several responses will follow: he will be unlikely to date her again, call her, or even speak to her. The attribution to her (i.e., to the entity) suggests numerous responses for dealing with her in the future. Person attributions, in contrast, provoke *stimulus generalization*. For example, if the young man decides that he is at fault for being ignored, then he can infer that not only this young lady, but other "stimuli," namely, other women, will behave in the same way. Kelley's model, then, is highly flexible: the information obtained in a causal search can yield any of several multiple meaningful patterns that in turn define guidelines for behavior. It should be noted that Kelley's covariation model has also been referred to as the ANOVA model. That is, the process of assessing covariation across several categories of information corresponds to similar processes in the formal statistical model known as analysis of variance (ANOVA).

Empirical investigations have supported certain aspects of the covariation model (e.g., Chen, Yates, & McGinnies, 1988; Ferguson & Wells, 1980; Hazlewood & Olson, 1986; Lord & Gilbert, 1983; McArthur, 1972; Orvis, Cunningham, & Kelley, 1975; Pruitt & Insko, 1980; Zuckerman, 1978). Researchers have found distinctiveness, consistency, and consensus to be relevant dimensions on which people base attributions. However, some studies using either hypothetical or real-world attributional dilemmas have revealed qualifications (Stevens & Jones, 1976; Tillman & Carver, 1980). For example, studies that have let subjects select their own information when faced with an attributional dilemma have found mixed support for the model; although subjects examine consensus, distinctiveness, and consistency information, their search is not as thorough or systematic as the ways the covariation model would suggest. When given the opportunity, people sometimes choose to acquire additional information about the actor (such as information about his or her personality) or information about the situation in which the act occurred (e.g., various situational constraints) rather than the types of information suggested by the covariation model (Garland, Hardy, & Stephenson, 1975).

It appears, then, that the three types of information are not equally influential. Consistency information is typically preferred over distinctiveness (e.g., Kruglanski, 1977), and consensus is typically least utilized (e.g., Kruglanski, Hamel, Maides, & Schwartz, 1978; Major, 1980; Olson, Ellis, & Zanna, 1983). Consensus information may require additional tests of its value for the attribution process, such as whether the other people are similar or dissimilar (e.g., Nisbett, Borgida, Crandall, & Reed, 1976). The consensus of similar others may strengthen some

inferences, whereas other inferences may be stronger given the consensus of dissimilar others (Alicke & Insko, 1984).

Jaspars and his associates (Jaspars, Hewstone, & Fincham, 1983; Hewstone & Jaspars, 1987) argue that many of these apparent deviations from Kelley's model result from the fact that the particular constellations of consensus, consistency, and distinctiveness information relevant to the causal judgment may not be available to subjects in experimental investigations. Although Kelley conceptualized his attribution theory as an analog to the statistical procedure of analysis of variance, as Jaspars et al. (1983) and others (Pruitt & Insko, 1980; Forsterling, 1989) have noted, when one attempts to fit the theory into the analysis of variance model, some of the cells are empty. In particular, the theory provides no guidelines for interpreting how other people perform at other tasks, what Pruitt and Insko (1980) call "comparison object consensus." Many of the recent refinements to Kelley's theory (Jaspars et al., 1983; Hilton & Slugoski, 1986; Pruitt & Insko, 1980) have developed primarily to address how people take this absent information into account.

In their natural logic model, Jaspars et al. (1983) maintain that when people encounter an event that requires attributional explanation, the person, the stimulus, and the circumstances that gave rise to the event are all regarded as potential causes. People detect cause-effect relationships by examining whether the effect generalizes across the possible antecedents of person, stimulus, and circumstances. In this way, consensus, consistency, and distinctiveness information are used to determine whether or not the event occurs in the presence of each of the possible causes. By analyzing the covariation information that is available, the person can identify the necessary and sufficient conditions for the occurrence of an effect, thereby precisely locating its cause (Hewstone & Jaspars, 1987). If an effect occurs when a particular cause is present, this cause will be considered sufficient to produce the effect. If the effect is absent when the cause is absent, the cause is perceived to be a necessary one. When several kinds of relevant antecedent information are available to a social perceiver, the various causal objects will be combined. Thus, for example, if Mary is the only student to fail a test but she has never failed a test before, then one assumes that something unique about the combination of Mary and this test produced the effect.

According to Jaspars and his associates, the social perceiver follows formal inference rules to deduce a cause from the particular configuration of covariation information (see also Jaspars, 1983). The model details explicit predictions for each of the eight possible combinations generated by the interaction of these three information variables. Although the predictions of the natural logic model explain some of the contradictory data generated by Kelley's model, they do not account for all deviations. For example, Jaspars and his associates (Hewstone & Jaspars, 1987; Jaspars et al., 1983) predict that no attributions will be made for certain of the consensus/distinctiveness/consistency configu-

rations. In fact, data show that subjects do make attributions under these conditions (Hilton & Slugoski, 1986; but see Hilton & Jaspars, 1987).

Recently, investigators have questioned a more fundamental assumption, namely whether the assessment of covariation is necessarily the main process by which causal attributions are formed or validated when information is ambiguous (Hilton & Knibbs, 1988; Hilton & Slugoski, 1986; E. R. Smith & Miller, 1978). We will defer extended discussion of this issue to the next chapter.

The Discounting and Augmenting Principles

Often when a person is trying to understand the causes of an event, evidence is not available about its consistency over time, its distinctiveness, and other people's experiences with it. Rather, the only information is a single occurrence of the event. In such cases, the social perceiver must fall back on other strategies or rules of causal inference than covariation. One such rule noted by Kelley (1972b) is the *discounting principle*. The discounting principle maintains that a social perceiver discounts any one candidate as a potential cause for an event to the extent that other potential causal candidates are available. For example, if I wreck my car at 2:00 A.M., you may be less inclined to conclude that I was tired and not paying careful enough attention if you learn that it was raining. Research conducted on the discounting principle suggests that sometimes it is strong (e.g., E. E. Jones, Davis, & Gergen, 1961), sometimes weak (E. E. Jones & Harris, 1967), and sometimes virtually absent (Messick & Reeder, 1974; Napolitan & Goethals, 1979; see Reeder, 1985, for a review). Under many conditions, the social perceiver appears insufficiently to discount situational information that constitutes an alternative cause for an actor's behavior. That is, you may assume I am a poor driver even if it was raining and the visibility was poor. In essence, this finding is much like that of Jones and his colleagues who found that social perceivers do not take sufficient account of situational constraints determining whether or not an actor freely chose an action in inferring a correspondent inference.

In addition, any cause can facilitate or inhibit a particular effect. An *inhibitory cause* interferes with the occurrence of a given event, whereas a *facilitative cause* increases the likelihood of its occurrence. When an effect occurs in the presence of both a facilitative cause and an inhibitory cause, people give the facilitative cause more weight in producing the outcome, because it had to be strong enough to overcome the inhibitory cause; this generalization is termed the *augmenting principle*. For example, if you learn that Sam was the winner of the skateboarding contest, you infer that he must be good. If I then explain that Sam is only six

years old (inhibitory cause), you will probably infer that he is especially good to have successfully eliminated a field of older and presumably more experienced contestants.

Hansen and Hall (1985) examined the impact of discounting and augmentation information on people's causal attributions and concluded that discounting is more potent than augmentation. That is, the addition of other potential causes for an effect weakened the inferred strength of the target causal factor more than the addition of the same number of opposing forces strengthened it. Similarly, the magnitude of the effect produced by facilitative as opposed to inhibitory forces was considered to be more informative regarding facilitative forces than of those inhibitory forces. Thus, for example, if Sam won by a large margin, he would be judged more likely than a narrow-margin winner to win again in the future, but if he lost big, he would be judged no more likely than a narrow-margin loser to lose again in the future. What these data suggest, then, is that the social perceiver may be more attuned to causal factors that promote a particular effect than to causal factors that may weaken or undermine it.

Causal Schemas

Another method a person may use to infer causality for single events involves the application of *causal schemas*. "A causal schema is a general conception the person has about how certain kinds of causes interact to produce a specific kind of effect" (Kelley, 1972b, p. 151). Each of us, in our experiences with cause-effect relations in the world, develops certain abstract conceptions about how causes work together to yield effects; we can use these so-called schemas when we wish to explain effects for which causal information is ambiguous and unclear.

Kelley described two types of causal schemas in particular: the multiple necessary causes schema and the multiple sufficient causes schema. We may know, for example, that when a particularly difficult or extreme effect is involved (such as winning a marathon), multiple causes will be needed to produce the outcome (such as ability, effort, good training, and favorable course conditions). We term this the *multiple necessary causes schema*. To fail such a task would not be very informative, because any one of the necessary conditions could be absent and the effect would not occur. To succeed in performing a difficult task is informative about the presence of several causes.

On the other hand, a *multiple sufficient causes schema* accounts for less extreme outcomes and assumes that any one of several causes could be sufficient to produce the effect. If I beat my four-year-old niece at checkers, you can attribute my victory to my ability, my effort, the fact that the task is familiar to me, or the fact that I can cheat and she does not

know enough to catch me. Any one of the causes will do equally well, and to the extent that any one is present, the social perceiver should employ the discounting principle to downplay the significance of the others (J. D. Cunningham & Kelley, 1975). For outcomes that are not extreme or difficult, then, success is not surprising or informative; any of a number of factors could have produced it. On the other hand, failure is somewhat informative, since failure on an easy task suggests that a variety of factors must not have been present.

Perceivers use not only information about the presence or absence of cause but also information about the relative *strength of causes* to judge cause-effect relationships. For example, if you know that I had a lot of money riding on the outcome of the checkers game with my niece and you also know that I tried hard, you may infer that I probably won by a handy margin. *Strength of effect* also provides information about cause-effect relationships. For example, if I beat my niece at checkers but just barely, you may infer that my ability is low, my effort was weak, the task may be novel, and I did not cheat very much.

Research on causal schemas has been plentiful (J. D. Cunningham & Kelley, 1975; DiVitto & McArthur, 1978; Karniol & Ross, 1976; Kun & Weiner, 1973; Leddo, Abelson, & Gross, 1984; Locksley & Stangor, 1984; M. C. Smith, 1975), although the adequacy of this research has been challenged conceptually (Fiedler, 1982) and empirically (Surber, 1981). Nonetheless, causal schemas are thought to be important aspects of causal inference for several reasons. First, causal schemas help people to make causal inferences when information is incomplete, sketchy, or derived from only one incident or observation. Second, they represent general conceptions about patterns of cause-effect relationships that may apply across a wide range of specific content areas. Causal schemata, in essence, give the social perceiver a causal shorthand for accomplishing complex inferential tasks quickly and easily. Based on our knowledge of causal schemata, we are able to use information about presence, absence, or strength of causes to infer effects when information is less than complete. And we are also able to use presence, absence, or strength of effects to infer causes and their relative strength.

Attribution Theory: A Note

The reader accustomed to viewing theories competitively may wish to know which one is right. The answer is that all of them have some validity, but under different circumstances and for different phenomena. The theories cannot be pitted against each other in the usual scientific manner. Rather, each outlines a series of processes that can be used to infer attributions if the appropriate circumstances are present. For example, if one has the opportunity to view an individual's behavior over time, then one can employ Kelley's covariation model to infer that

person's dispositional qualities. If not, then one may have to infer the person's dispositions from knowledge of the social desirability of the act and whether or not the person chose it. Despite the best efforts to compare and contrast the theories (e.g., Howard, 1985; E. E. Jones & McGillis, 1976; K. G. Shaver, 1975), relatively little has emerged in the way of theoretical refinement. The theories adopt different slants rather than differing hypotheses or stands on fundamental issues.

The ideas of Heider, Jones and Davis, and Kelley constitute the early and focal theoretical contributions to attribution theory. In many respects, these theories detail an idealized manner in which the social perceiver might make attributions. Psychologists call such theories normative, because they outline the appropriate norms or guidelines for how a process should proceed. But, as will be seen shortly, research in attribution theory revealed that the social perceiver does not always follow these normative guidelines. Sometimes the process of making attributions occurs spontaneously, without the kind of detailed causal analysis that Heider, Jones and Davis, and Kelley describe. In certain cases, the social perceiver appears to seize upon a sufficient causal explanation without performing the additional cognitive work to determine if it is an accurate or the best causal explanation. Moreover, the attribution process appears to be marked by certain persistent biases. The contributions of Heider, Jones and Davis, and Kelley's models, then, have been held up as normative theories against which actual attributional processes can be compared.

In the next section, we consider three additional attributional formulations developed by Stanley Schachter, Daryl Bem, and Bernard Weiner. Schachter's work is notable for extending attribution ideas to self-perception, especially the self-perception of emotion. Bem's theory is also concerned with self-perception, and he argues that people often infer their own beliefs from environmental factors that provide cues about their beliefs. What Schachter's and Bem's theories have in common are the ideas that the attribution process can occur quite quickly with a fairly cursory examination of the environment, and the belief that as a consequence of its rapidity and simplicity, the attribution process can be subject to misattribution and faulty inference. Finally, Bernard Weiner's attributional theories of achievement and helping have been useful in identifying a set of focal dimensions along which attributions may be inferred, and in integrating attributional dimensions with emotional responses.

SCHACHTER'S THEORY OF EMOTIONAL LABILITY

In his early work on affiliation, Schachter (1959) observed that when people expect to undergo a stressful experience, they sometimes choose

to affiliate with others who will also be undergoing similar stressful experiences. After ruling out several possible explanations for this effect, he concluded that people have a need to compare their emotional state with that of similar others so as better to understand and to label their own reactions. If this is true, Schachter reasoned, then the internal physiological cues on which people normally draw to help interpret their arousal must be relatively ambiguous and subject to multiple interpretations. Consequently, people's perceptions of their emotions may be indirect and relatively labile (unstable). If people have direct access to their emotions, why would they need to compare them with others?

These and other observations led Schachter (1964, 1971; Schachter & Singer, 1962) to posit that there are two necessary conditions for emotion: a state of psychological *arousal*, nonspecific with respect to a particular emotion, and *cognitions*, which label the arousal and determine what emotion is experienced. Under some circumstances, cognitions precede arousal (for example, knowing that mambas are the most deadly snakes and then becoming aroused when one encounters one in the brush). Under other circumstances, a state of arousal may occur first, which then prompts a cognitive search for a causal explanation of that aroused state. Under these circumstances, cues from the immediate environment then become likely candidates for labeling arousal as a particular emotion.

To see if the interpretation of arousal is indeed malleable, Schachter and Singer (1962) conducted a now-classic experiment. One group of undergraduate students was injected with epinephrine: half were told its true side effects (e.g., rapid breathing, flushing, increased heart rate), and half were told to expect effects that are not, in fact, produced by epinephrine (e.g., dizziness, slight headache). A control group of subjects was given no drug. Subjects were then placed in a room with a confederate of the experimenter and were instructed to fill out some papers. After a brief time (during which the epinephrine took effect in those who had received it), the confederate began to act in either a euphoric manner (engaging in silly antics and making paper airplanes) or in an angry manner (ripping up the papers and stomping around the room).

Schachter and Singer reasoned that if physiological experience is indeed subject to multiple interpretations, then those subjects who had been misinformed about the side effects of epinephrine and who later found themselves in a state of arousal would be searching for an explanation for their state. For these subjects, the behavior of the confederate could act as a salient cue for explaining their arousal, suggesting to those subjects in the euphoric condition that they were also euphoric and to those in the angry condition that they were angry. Subjects who had been informed about the side effects of epinephrine, in contrast,

already had an adequate explanation for their arousal state and could remain amused or annoyed by the confederate without acquiring his mood. Subjects in the control condition would have no arousal state to explain and also should not catch the mood of the confederate. Generally speaking, this is what Schachter and Singer found. A description of their experiment is presented in Table 2.2. Schachter's ideas and the results of this experiment extensively influenced both the study of emotion and the understanding of causal attribution. As our present concern is with attribution, we will not cover the work on emotions until Chapter 10.

One of the most important aspects of Schachter's work is the point that attributions for arousal are malleable. This point is significant in part because it suggests that emotional reactions induced by a threatening experience can be reattributed to a neutral or less threatening source. The idea has profound clinical implications because it provides a potential general model for the treatment of emotional disorders (Valins & Nisbett, 1972). Consider the fact that there are a great many people who are anxious over real or imagined faults. An adolescent boy may believe he is unable to talk to girls and so avoids them. A middle-aged woman returning to work after years of child rearing may doubt her ability to convey a good impression and thus avoid tackling the job market. In such situations, a cycle of emotional exacerbation may occur (Storms & McCaul, 1976). The adolescent, fearful that he will ruin his chance with a girl, becomes so anxious that his hands get sweaty and he stutters just saying "hello." Or the middle-aged woman may think of so many things that could go wrong in a job interview that she cannot even get up the courage to check the newspaper listings.

TABLE 2.2   THE MISATTRIBUTION OF AROUSAL

	Subject informed of true side effects of epinephrine	Subject misinformed of side effects of epinephrine	No arousal
Exposure to angry confederate	Subject correctly labels arousal; does not infer that he is angry	Subject interprets own arousal as anger	Subject has no arousal and infers no emotion for the self
Exposure to euphoric confederate	Subject correctly labels arousal, does not infer that he is euphoric	Subject interprets own arousal as euphoria	Subject has no arousal and infers no emotion for the self

Source: After Schachter and Singer, 1962

The misattribution paradigm (Valins, 1966) suggests that by inducing people to reattribute their arousal to some nonthreatening source, the exacerbation cycle can be broken. Consequently, they will function more effectively in the settings that currently make them anxious. The woman contemplating a return to work might be told that changes in schedule, strange settings, and trying to get to new places on time all produce some change in heart rate and breathing, and therefore, if she finds herself experiencing these changes, she should realize that they are normal physiological responses to changes in daily activities. Now having a safe, external stimulus to account for her arousal, the woman might calm down enough to schedule an interview and follow through on it. A number of experiments using this kind of intervention have yielded support for the reattribution approach (e.g., Brodt & Zimbardo, 1981; G. C. Davison & Valins, 1969; Nisbett & Schachter, 1966; Olson, 1988; L. Ross, Rodin, & Zimbardo, 1969; Storms & McCaul, 1976; Storms & Nisbett, 1970; Valins & Ray, 1967; Worchel & Brown, 1984).

After the early work supporting Schachter's ideas, some researchers criticized both the theory and its potential clinical applications. One criticism concerns whether environmental cues are easily accepted as bases for inferring one's own emotions, as Schachter implies (e.g., Maslach, 1979; Marshall & Zimbardo, 1979; Plutchik & Ax, 1967). People's efforts to understand an unexplained state of arousal appear to involve more extensive search than a quick examination of salient cues in the surrounding environment (Maslach, 1979). People also seem to be more likely to interpret unexplained arousal negatively—for example, as feelings of unease or nervousness—than positively (Maslach, 1979; Marshall & Zimbardo, 1979). These results question the extent of emotional lability (see also Schachter & Singer, 1979).

Researchers have also criticized the misattribution effect (see Parkinson, 1985, for a review). They point out that it is not completely reliable (e.g., J. W. Duncan & Laird, 1980; M. Ross & Olson, 1981; Slivken & Buss, 1984), that it may be rather short-lived (Nisbett & Valins, 1972), and that some attempts to demonstrate it have failed (e.g., Conger, Conger, & Brehm, 1976; Kellogg & Baron, 1975; Singerman, Borkovec, & Baron, 1976; see Reisenzein, 1983, for a review). Even when people have successfully been induced to reattribute their arousal to a nonthreatening source and accordingly experience reduced symptoms or anxiety, it is not clear that attributions mediate these effects (Girodo, 1973; S. C. Thompson, 1981). For misattribution effects to occur, the alternative arousal source must be plausible, unambiguous, and salient (e.g., Olson & Ross, 1988; Sterling & Gaertner, 1984), the actual cause of the arousal must not be obvious, and the subjects must believe that the misattribution source is having more impact on their arousal than it actually is (Olson & Ross, 1988; Ross & Olson,

1981). Misattribution effects also appear to occur only for a limited range of emotion-inducing stimuli (Parkinson, 1985).

Moreover, laboratory investigations of the misattribution effect seem to be more successful than actual clinical investigations (e.g., Nisbett et al., 1976; Parkinson, 1985). It may be that a person with a real problem already has a stable explanation for his or her arousal and does not search for alternative explanations; hence, he or she may not be vulnerable to misattribution efforts. Or perhaps people with real problems test out the misattributions they are given for their problems more fully than do people with laboratory-induced or short-term problems. In so doing, they may learn that the misattribution feedback is not true or at least not completely true. Suppose, for example, that our anxious job hunter has been told that her arousal is due to her change in schedule. She then decides to have several dress rehearsals for her job interview to rid herself of the arousal. She rises in the morning, dresses, drives to the spot where the interview will be held, and takes the elevator up to the office so that she is completely comfortable with the route. On the morning of the job interview itself, however, she is still terrified, because it is in fact the job situation that makes her nervous, not the changes in her schedule.

To summarize, although Schachter and Singer's emotional lability hypothesis has had a substantial impact on the development of attribution theory, twenty years of research suggest that its ability to explain or modify emotional experience has limitations. One can conclude that, within limits, people can be induced to reattribute arousal from one stimulus to another, particularly when the circumstances are short-term and relatively uninvolving. However, people have multiple methods for understanding their own emotional experiences, and when they are motivated to use them, misattribution effects may be weak.

BEM'S SELF-PERCEPTION THEORY

Another important contribution to attribution theory was Daryl Bem's work on self-perception (1967, 1972). Bem was concerned, as Schachter was, with how people infer their own reactions, emotions, and attitudes. And he argued, as Schachter did, that people's internal cues to their reactions are neither as directly accessible nor as unambiguous as they usually think they are. Instead, as Schachter argued, Bem argued that people often infer their internal reactions from environmental factors that provide cues about their beliefs.

Specifically, Bem's (1972) theory of self-perception posits that the processes people use to infer their own attitudes are not substantially different from those they apply in trying to infer other people's attitudes. He argues that people know their own internal states, such as

attitudes or emotions, in part by inferring them from the observation of their behavior and the circumstances in which the behavior occurs.

Suppose someone asks me if my roommate likes rock music. I may have never heard him state a preference, but I will likely think over what tapes or records he chooses to play and what radio stations he selects. If he plays Mozart and Brahms all day, I am likely to conclude that he does not like rock. If he never turns off the rock station on the radio, I am likely to conclude that he does. Bem's point is that we often infer our own attitudes in the same way that we infer those of others, namely, by observing behavior. If someone asks me if I like rock, according to Bem, I may well employ the same process I would apply to others. I think over how often I choose to listen to rock and decide on that basis if I like it.

One of the most fruitful applications of Bem's self-perception theory has been to the study of motivation. Bem's theory predicts that when people are attempting to understand why they perform particular tasks, they look to see if their behavior is under the control of external forces or under the control of their own desires. Behavior attributed to external factors, such as being paid for a job, will produce an external attribution, whereas performing the same task for a minimal reward will lead to an assumption of intrinsic interest: "I couldn't have done it for the money, so I must have done it because I enjoyed it." This analysis has been applied to the paradoxical situation that minimal rewards lead to high interest in a task and that extrinsic rewards for intrinsically satisfying interests actually undermine intrinsic interest. This phenomenon has been termed the *overjustification effect*.

The earliest demonstration of the overjustification effect was conducted by Lepper, Greene, and Nisbett (1973) with nursery school children. Some children were told that they would get a "good player award" with a gold star and ribbon if they would draw pictures with a felt-tip pen for a few minutes. Other children were not told about the award. All children then drew for several minutes and the first group was given their awards. A few days later, all the children were observed in a free-play situation, and the felt-tip pens were among the materials provided. Children who had been given the awards spent half as much time drawing as the children who had not been given awards. The intrinsic interest of the children receiving awards had been undermined by the extrinsic reward. This finding has been replicated many times (see Deci & Ryan, 1985).

The consequences of overjustification extend beyond attributions for performance. People given an external reward for performing an intrinsically interesting task choose simpler tasks and are less efficient in using available information to solve problems. They tend to be answer-oriented rather than process-oriented, and they are less logical in their problem-solving strategies. Although they work harder and produce more activity, the output is of lower quality, contains more errors, and is more stereotyped and less creative than the work of non-rewarded people performing the same tasks. Finally, people are less likely to return to a task they at one time thought was interesting after they have been rewarded to do it well. These findings generalize across a wide range of people performing a wide range of tasks (Condry, 1977; see also Amabile, Hennessey, & Grossman, 1986; Boggiano, Harackiewicz, Bessette, & Main, 1985; J. Newman & Layton, 1984; Pittman, Emery, & Boggiano, 1982; Pretty & Seligman, 1984; Seta & Seta, 1987). See Table 2.3.

Research on Bem's theory has concerned the self-perception of attitudes as well, and empirical work has suggested some qualifications to these effects. Behavior must be perceived to be directly relevant to the attitude in question for self-perception effects to occur (C. A. Kiesler, Nisbett, & Zanna, 1969). Self-perception processes also may apply in only a limited range of settings. Imagine that you are asked what television program you would like to watch tonight. You may think about

TABLE 2.3   AN ANALYSIS OF THE OVERJUSTIFICATION EFFECT: REWARDS UNDERMINE INTRINSIC INTEREST

Reason for performing a task	Example	Will be the dominant reason for performing the task if:	Consequences
Intrinsic interest	Working at one's job because one loves it	Intrinsic interest is salient; extrinsic reasons for not performing the task are salient; rewards signify competence, rather than efforts at control; rewards are contingent upon good performance	Take more pleasure in the task; show more efficient and logical problem solving; maintain task performance in the absence of rewards; select more challenging subsequent problems; solve problems with fewer errors and more creativity
Extrinsic rewards	Working at one's job because it pays well	Rewards are salient or undesirable; rewards constitute efforts at control; rewards are not contingent on a high level of performance; rewards are not seen as given to reward competence	Work hard; generate more activity; show less enjoyment of task; show reduction in performance if rewards are withdrawn; choose easier subsequent tasks; solve problems less efficiently and less logically; be less creative, more error-prone, more stereotyped in performance; quality will be lower

what show you watch most often and answer, "Star Trek," overlooking the facts that "Star Trek" reruns always come on after the news (which you always watch with dinner) and that you usually have not finished eating when "Star Trek" comes on. Now imagine that a newly incarcerated convict who will have limited viewing time is asked the same question. The convict is unlikely to make the same mistake. He or she may think over the merits of different shows more carefully and decide on the basis of something other than chance factors (i.e., not based on what comes on after the news), since his or her choice of shows involves higher stakes (see S. E. Taylor, 1975).

Bem's self-perception approach has been important in the development of attribution theory for several reasons. First, it posited a very simple model of self-perception, which, although not the whole picture, is an important mechanism in understanding how people perceive and understand their own beliefs. Second, the simplicity of Bem's model and lack of complex assumptions regarding the thought processes of the social perceiver foreshadows the cognitive miser perspective that currently dominates much thinking within social cognition. The emphasis on the capacity limitations of the social perceiver and the need to use shortcuts to solve problems quickly and efficiently are implicit in Bem's work.

WEINER'S ATTRIBUTION CONTRIBUTIONS

The Structure of Causal Experience

Whether a cause is internal (generated by the person) or external (caused by the situation) is an important dimension of causality in many of the early attribution formulations (Heider, 1958; Rotter, 1966). For example, if you fail a test, it is important to know whether you lacked the ability to do well or whether the test was particularly difficult, but knowing the locus of a cause (i.e., whether it is internal or external) is not enough. Even if you decide that failing the test was your fault, it makes a big difference to you whether or not this will happen again. Thus, the stability of the behavior is also important, for it helps you further to refine what you are to make of this test failure. As the contributions of Kelley (1967) and E. E. Jones and Davis (1965) make clear, causal analysis is most informative when stable causes are uncovered, such as dispositional qualities that do not change from situation to situation. Thus, at the very least, two dimensions of causality seem to be important: locus (internal, external) and stability (stable, unstable).

But recall that people do not make causal attributions solely to understand why something happened. People also make causal attributions to understand what controls future events (Heider, 1958; Kelley,

1967). Thus, a third dimension, controllability, may also be important for understanding the implications of causal analysis. For example, if the cause of your failure is something you can control, its implications for your worklife are very different than if the cause of your failure is beyond your control.

Drawing upon these observations and assumptions, Bernard Weiner and his associates have integrated the three dimensions of locus, stability (Weiner et al., 1972), and controllability (Weiner, 1979) into a model of causal attributions that they have explored in the context of achievement, helping behavior, and several other domains (see Weiner, 1986). Using an achievement situation as an example, Weiner maintains that people assess whether they have failed or succeeded at a task and react in a general emotional way (positively or negatively) to that judgment. These general emotions are followed by a search for the cause of the outcome along the three dimensions of locus, stability, and controllability. The outcome of the causal search, that is, the causal attribution, then dictates future achievement expectations and more specific emotional reactions, such as pride or shame (Weiner, 1986). Expectations and emotions, then, jointly determine subsequent achievement-related performance. This model is depicted in Figure 2.2 and is described in more detail in the sections that follow.

Causal Attribution and the Example of Achievement

Several years ago, a little-known predominantly Hispanic high school in East Los Angeles, California, startled the testing world by achieving mathematics scores on standardized exams that greatly exceeded both their past performance and those of most other schools in the nation. The dramatic rise in scores has since been credited to the teaching of one remarkable and dedicated teacher and the responsiveness of his students. However, at the time, testing officials were so surprised by the outcome that they forced all of the students to take their exams over, feeling that cheating must have taken place.

This example illustrates several important points about causal attribution in achievement situations. First, unexpected results prompt causal analysis. Had the students achieved the scores that were expected for their high school, no one would have found it necessary to explain the outcome. Second, the dimensions of locus, stability, and controllability help us to understand the perceived cause of behavior. The test administrators inferred that a test that normally taps stable, internal, uncontrollable qualities such as student aptitude had instead tapped an unstable, external, but controllable, factor, namely cheating. Third, causal attributions have implications for the future. Expectations for future behavior, actual performance, and affective reactions may all
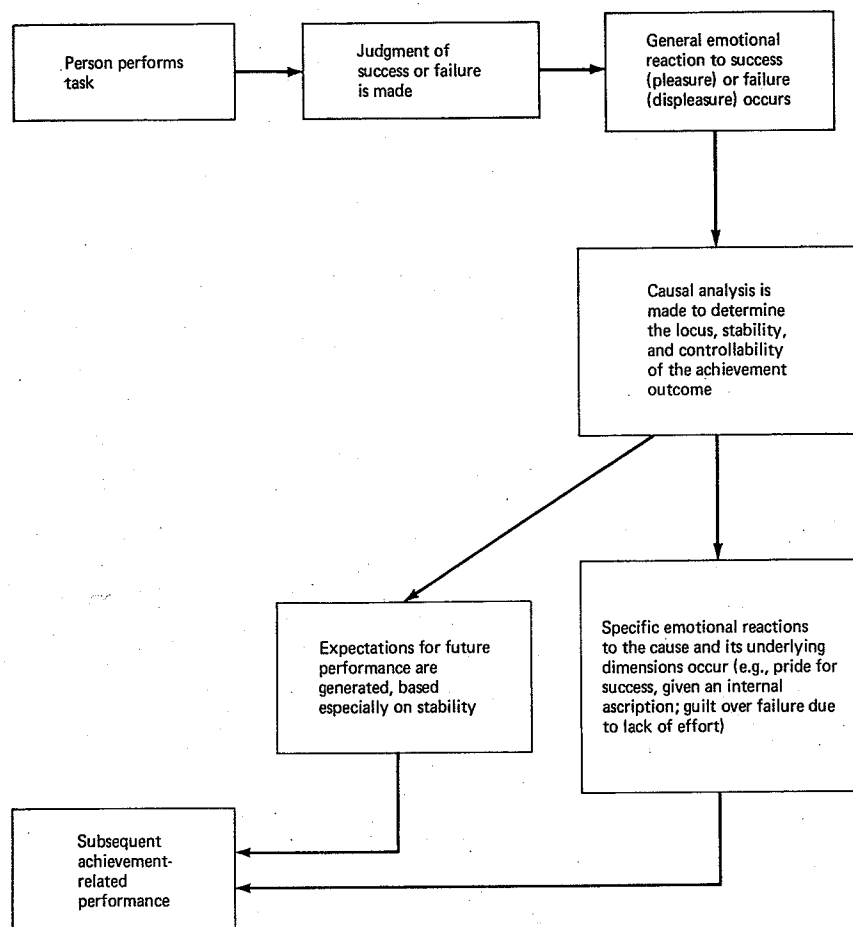
FIGURE 2.2 A causal analysis of achievement behavior. (After Weiner, 1979.)

be determined by causal analysis. Thus, attributing good performance to possible cheating implied that upon retaking the test (without the possibility of cheating), the students' test scores would reflect their presumed actual ability and likely future performance.

Table 2.4 presents the three dimensions of the causes of achievement and examples of each kind of cause. Consider first the internal causes. *Aptitude* is both stable and uncontrollable, presumably because it is determined by raw intelligence. *Mood* is also uncontrollable, but it is unstable: one's mood varies from situation to situation, but generally not as a function of one's own attempts to control it. *Effort* is controllable, but it may be either stable or unstable. The typical effort one puts into a task (e.g., studying three hours each night) is stable, but the

TABLE 2.4 POSSIBLE CAUSES OF ACHIEVEMENT OUTCOMES ACCORDING TO LOCUS, STABILITY, AND CONTROLLABILITY

Controllability	Internal		External	
	Stable	*Unstable*	*Stable*	*Unstable*
Controllable	Typical effort exerted	Temporary effort exerted (for this particular task)	Some forms of teacher bias	Unusual help from others
Uncontrollable	Aptitude	Mood	Task difficulty	Luck

SOURCE: After Rosenbaum, 1972, p. 21; Weiner, 1979

effort exerted for a particular task (e.g., studying extra hard for this test) is unstable.

When we consider external causes, objective task difficulty is stable and uncontrollable: the task cannot be changed. Luck is both unstable and uncontrollable. Some external factors are controllable, however. A teacher's belief in your inherent ability, for example, is stable and under personal control. And finally, unusual help from another person is controllable but unstable. For example, a friend may offer to help you study for a particular test, but he may or may not make the same offer again.

Much of Weiner's analysis has focused on how causal attributions influence future expectations, emotions, and performance. Thus, the model is a dynamic one; that is, it focuses on change over time. Weiner maintains that expectations about the future are determined primarily by the stability of one's causal attributions. For example, if I expect to succeed but fail on a test, my expectations should shift little in response to the failure if I attribute the failure to unstable factors such as effort or luck; I would expect the unstable factors not to be present again, so I would simply try again, expecting to succeed. On the other hand, if I expected to succeed and failed, but attribute the failure to my lack of ability or to task difficulty (stable factors), my expectations should now shift in response to the failure; neither the task's difficulty nor my ability are going to change the next time I try the task (Graham & Brown, 1988; for a review, see Weiner, 1986).

Specific emotional reactions to an attribution are influenced by such factors as its locus, its controllability, and who is the recipient of the outcome. Some emotions depend upon locus. For example, one might feel pride if one performed a positive act (internal locus). But the controllability of the outcome is also important for understanding emotions. For example, if a negative outcome hurts either oneself or another person, and that outcome is under the control of another person,

one is likely to be angry. Likewise, if a positive outcome is due to the voluntary help of another (controllable, external), one is likely to be grateful to that person. Guilt is the emotion probably experienced by one who brings about negative outcomes for others or one's self, when the factors are within his or her control. Stability seems to intensify affect. If a cause is seen as stable, the resulting affect will be more pronounced than if the cause is unstable (Weiner, 1979). Stability may also relate to future-oriented emotions, such as hopelessness or anxiety. Several studies using a variety of methodological techniques attest to the temporal sequence that attributions can evoke specific emotional responses which, in turn, alter expectations. We will cover affective reactions to attributions more fully in Chapter 10. The important point here is that, according to Weiner's model, locus, controllability, and stability determine the emotional consequences of attributions.

Performance, in turn, typically parallels expectations and affect, being jointly determined by them (Covington & Omelich, 1979). For example, one may try harder when one attributes one's prior failing performance to unstable rather than stable factors, and these effects may be enhanced by feelings such as guilt over one's prior performance. Alternatively, one may cease trying if expectations of future success are low and feelings of hopelessness are high.

So far, we have focused primarily on people's self-attributions for behavior and their implications for future expectations and performance. Attributions are also important in determining how one responds to another person. For example, one may need to decide whether or not to offer that person help or how to evaluate the person. Weiner (1979, 1980c) argues that the controllability dimension carries special weight in making such decisions. For example, teachers are often especially hard on students who are clearly able but perform badly. Presumably the teacher sees the student's behavior as being under the student's control, and thus the teacher believes that the able student who performs poorly has failed to make the necessary effort. On the other hand, a teacher may be inclined to help students whose difficulties are beyond their control (Brophy & Rohrkemper, 1981; Reisenzein, 1986; Schmidt & Weiner, 1988).

To summarize Weiner's model briefly, three dimensions underlie the causal attributions that are made for the achievement outcomes of success and failure. The stability dimension indicates whether or not the cause will change and is strongly associated with subsequent expectations of success or failure. The locus dimension concerns whether an individual attributes performance to internal or external factors and is tied to changes in self-esteem-related emotions such as pride and shame. The controllability dimension relates to whether or not a person has control over the outcome; people often use it as a basis for evaluating themselves or someone else or offering a person help. In the typical

achievement situation, people first access whether or not they succeeded or failed and feel happiness or unhappiness accordingly. They then make a causal attribution for that outcome, which leads to more specific emotional responses, for example, guilt over an effort attribution for failure or pride over an ability attribution for success. People then generate expectations of the probability of subsequent success, and these expectations are again followed by predictable emotional responses; for example, an attribution of failure to low ability produces low expectations of subsequent success as well as feelings of hopelessness. Expectations and emotional reactions jointly determine subsequent performance.

Weiner's model has been popular and widely supported. That success has not precluded criticism, however. Although researchers have generally agreed that locus is an important dimension of causal experience, and many concur that stability is also important, some question whether controllability contributes much to the model (Abramson, Seligman, & Teasdale, 1978; de Jong, Koomen, & Mellenbergh, 1988; Ickes & Kidd, 1976; Passer, 1977; Phares, 1976; Vallerand & Richer, 1988). It may be that controllability is an important dimension for understanding some domains such as helping or achievement behavior (Meyer, 1980), but it may not be as important for other domains of attribution (see Weiner, 1985b).

Critics have also focused on Weiner's hypothetical temporal sequence of events (see Figure 2.2). Some research suggests that changes in performance or changes in expectations may precede or be independent of causal attributions (see, for example, Covington & Omelich, 1979). Other researchers suggest that general affective changes may also be caused by attributions rather than solely determined by the outcomes of success or failure (McFarland & Ross, 1982). Thus, critics have questioned both the temporal sequence itself and the place of attributions in it (see also D. Russell & McAuley, 1986).

Some of the evidence for Weiner's model comes from studies using role playing or scenario methodologies. Researchers ask subjects how they think they or others would behave in particular situations such as failing a test. Because Weiner's model makes sense intuitively, the danger exists that subjects merely report what makes sense to them, rather than reporting how they would actually behave in the situation, thus providing only apparent support for the model. Studies that examine causal attributions in real situations, such as actual achievement settings of success and failure, provide converging support for the validity of the model (e.g., Vallerand & Richer, 1988).

In the net evaluation, Weiner's model fares quite well. Overall, the model is admirably specific in its hypotheses, and hence, easily subject to empirical validation. Although not all studies have supported all contentions of the theory, that in part may be due to measurement problems (e.g., Elig & Frieze, 1979; D. Russell, 1982).

Weiner's model was originally developed to encompass attributions about achievement-relevant behaviors and to predict changes in subsequent motivation, emotions, expectations, and performance. It is a mark of the theory's success that aspects of it have now been applied in other domains as well, including sex stereotyping (Deaux, 1976), emotional development (Graham & Weiner, 1986), helping (Ickes & Kidd, 1976; G. Schmidt & Weiner, 1988), loneliness (Michela, Peplau, & Weeks, 1983), parole decision making (Carroll & Payne, 1976), excuse making (Weiner, Amirkhan, Folkes, & Verette, 1987), personal problem solving (Baumgardner, Heppner, & Arkin, 1986), perceptions of sports events (Tenenbaum & Furst, 1986), reactions to hyperactivity medication (e.g., Henker & Whalen, 1980), reactions to perceived lack of control (Abramson et al., 1978), programs to improve academic performance (Van Overwalle, Segebarth, & Goldchstein, 1989; Forsterling, 1985), and reactions to stigmatized others (Graham, 1984; D. Russell et al., 1985; Weiner, Perry, & Magnusson, 1988) including people with AIDS (Weiner, 1988a). In addition, it has exerted considerable influence on researchers in many countries, and a number of its basic principles have received substantial cross-cultural support (Fletcher & Ward, 1988; Schuster, Forsterling, & Weiner, 1989; Stipek, Weiner, & Li, 1989).

SUMMARY

Attribution theory is a collection of ideas about when and how people form causal inferences. It examines how individuals combine and use information to reach causal judgments. Although the impetus for the attribution process is thought to be motivational, causal analysis itself is believed to proceed cognitively. Psychologists consider attributions to be important because they are the underpinnings of further judgments, emotional reactions, and behavior.

Attribution theory began with Heider's work on naive psychology, which maintained that the natural language people use to characterize causal action can form a basis for a theory of causal inference. Drawing on Brunswik's lens model of perception, Heider maintained that social perception is much like object perception in its need to consider attributes of the target person, attributes of the perceiver, and the context and manner in which the perception occurs. Heider thought causal inference depends on perceptions of an actor's motivation and ability and on situational factors that impede or promote an action. In addition to his work on causal inference, Heider heavily influenced theoretical and empirical research on attributions of responsibility.

Jones and Davis's theory of correspondent inference, a second cornerstone of attribution theory, maintains that the goal of the causal inference process is to locate the stable underlying attributes of individu-

als that explain their behavior across situations. Behaviors that are believed to be unconstrained and freely chosen, those that are out of role, actions that are not socially desirable, actions that violate prior expectations, and actions that produce distinctive consequences are all believed to reveal underlying attributes. The perceiver's needs also influence the interpretation of action; actions that are hedonically relevant for the perceiver and those perceived as produced for the perceiver's benefit (personalism) are regarded as more correspondent than actions that do not directly affect the perceiver.

Harold Kelley developed the covariation model of how individuals form causal inferences when they have access to multiple instances of similar events. According to the model, individuals employ a covariation principle to determine how the outcome in question varies across entities (distinctiveness), across time and modality (consistency), and across people (consensus). The goal of this process is to attribute the outcome to a stable cause or pattern of causes. When only a single occurrence of an event is known to a perceiver, the covariation principle cannot be used, and other rules or strategies of causal inference must be employed. One such rule is the discounting principle, which maintains that the role of any one potential cause of an event is discounted to the extent that other causal candidates are available. The perceiver may also employ complex causal schemas that tie patterns of causes to patterns of effects, including the multiple necessary causes schema for difficult or extreme events and the multiple sufficient causes schema for easy or more common events.

Three other lines of work also heavily influenced early attribution formulations. Schachter's theory of emotional lability examines attributions for emotional states. He argued that internal physiological cues are often ambiguous and consequently may be labeled as consistent with any of several emotions or sources of arousal. This emotional lability makes arousal subject to misattribution, a finding that has prompted therapeutic work inducing people to reattribute their arousal from threatening internal sources to nonthreatening external sources. Support for the emotional lability argument, however, is mixed.

In a formulation similar to Schachter's, Bem's theory of self-perception argues that people infer their own attitudes using substantially the same processes as they employ to infer others' attitudes, that is, the observation of behavior. When asked one's attitude, one considers one's previous behavior, determines whether or not it was freely chosen, and infers one's attitude accordingly. With this line of work, Bem extended attribution ideas to include causal inferences about the self.

Weiner's work on attribution theory is notable primarily for developing the dimensions of attributional experience, integrating attributions with emotional processes and enlightening the attributional and

affective experiences that underlie achievement behavior, helping, and other concrete domains of experience. Weiner proposed three underlying dimensions: locus (internal, external), which is associated with changes in self-esteem and other affects; stability (stable, unstable), which is associated with changes in expectations and performance; and controllability (controllable, uncontrollable), which is associated with social affects (such as guilt, anger, pity, and gratitude), and behaviors (such as decisions to intervene in one's own or another's plight). Although Weiner's work was developed initially to explain achievement behavior, several attributional formulations have made use of these dimensions in their analyses of different situations.